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SOUTHWESTERN STATES

by

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CONDITIONS IN BRIEF

Insect activity increased in the Southwest in 1964. A new spruce beetle infestation erupted and killed nearly 2,000 Engelmann spruce on Mt. Taylor in central New Mexico. The recent spruce budworm infestation spread from 50,000 to 90,000 acres on the Lincoln National Forest in southern New Mexico. The old budworm infestation intensified on 350,000 acres of State and private land in northern New Mexico. New outbreaks of Arizona five-spined ips, a pine ips and a pine bark beetle caused serious damage in several southern localities of Arizona and New Mexico. The white fir needle miner, previously unrecorded in the Region, damaged several thousand acres of white fir on the Kaibab Plateau of northern Arizona. The Great Basin tent caterpillar defoliated many stands of aspen in local areas of Arizona, thereby reducing the esthetic values and threatening watershed values in these areas. The Black Hills beetle in the Manzano Mountains of central New Mexico was less troublesome than expected. Infestations of Douglas-fir beetle remained static at high levels throughout the Region. The pinyon needle scale is again active at Grand Canyon National Park.

Control was carried out against the spruce beetle, a pine bark beetle, the Nevada buck moth, and two species of tent caterpillars. With the exception of the spruce beetle projects, control efforts were directed toward small infestations in high-use recreation areas.

STATUS OF INSECTS

The spruce beetle, Dendroctonus obesus (Mann.). A serious outbreak of spruce beetle resulted in the loss of 2,000 overmature Engelmann spruce on Mt. Taylor near Grants, New Mexico. Extremely high broods and lack of natural control factors indicated a sharply increasing population. Cultural control measures were immediately started by the Cibola National Forest. The 7-year-old infestation on the Carson National Forest near Taos, New Mexico, declined in extent and intensity. This decline resulted from continued logging of infested stems and burning of about 9,800 acres of infested cull and slash during the last four years. The infestation at the Snow Bowl Ski Area, Flagstaff, Arizona, remains active.

Spruce budworm, Choristoneura fumiferana (Clem.). The Region's most aggressive budworm infestation is on the Lincoln National Forest, where this year the infestation spread from 50,000 to 90,000 acres. An active infestation on the Gila National Forest remained at 40,000 acres. Other infestations on State and private land in northern New Mexico cover nearly 100,000 acres near Chama and 250,000 acres near Cimarron. These older infestations have not spread appreciably but have intensified during 1964. Egg mass densities remain extremely low in areas treated in 1962 and 1963.

Arizona five-spined ips, Ips lecontei Sw. Two new infestations of this pest were reported this year. About fifteen groups, ranging from 20-50 dead or dying trees per group, were found south of Prescott, Arizona. Four groups totaling about 150 trees were killed at Oak Creek Canyon Recreation Area, Sedona, Arizona. Measures are being taken to control this infestation. Sedona is the most northern point recorded for this Mexican species.

A pine ips, Ips pini (Say). This insect flared up and killed between 400 and 600 pole-size ponderosa pine at Ruidoso, New Mexico. A similar outbreak appeared in the nearby Capitan Mountains. This is the first time since 1960 that this pest has caused tree mortality of any significance in these areas.

A pine bark beetle, Dendroctonus adjunctus Blandf. A new outbreak in approximately 200 ponderosa pine was chemically treated at Riggs Lake Recreation Area, Safford, Arizona. The infestation on the Lincoln National Forest near Ruidoso, New Mexico, showed a slight increase this year.

White fir needle miner, Epinotia meritana Hein., This pest, previously unrecorded in the Region, is infesting several thousand acres of white fir on the Kaibab Plateau of northern Arizona. An evaluation indicated a light but increasing population. It is expected the infestation will also increase in size.

Tent caterpillars, Malacosoma spp. The Great Basin tent caterpillar, Malacosoma fragile (Stretch), continues to jeopardize scenic, recreation and watershed values at localized areas throughout aspen stands of the Region. In the scenic and recreation areas of the Kaibab Plateau and the Pinal and Huachuca Mountains of Arizona, the defoliation was not only unsightly, but the caterpillars were also a nuisance to the visiting public.

Heavy populations of this pest are threatening the watershed on Navajo Mountain near Tuba City, Arizona. In addition, livestock water, already in short supply, is being contaminated by the migrating, food-seeking larvae. In northern New Mexico the population centers shifted, with the infested areas remaining at about 100,000 acres.

An infestation of M. fragile along the approach road to the North Rim of Grand Canyon was sprayed with malathion with only limited success. A pilot test was conducted against a Malacosoma species on cottonwood and willow near Tucson, Arizona, using a native polyhedrosis virus and the bacterium Bacillus thuringensis Berliner. The results of this test are being investigated.

Black Hills beetle, Dendroctonus ponderosae Hopk. The outbreak in ponderosa pine on the Mountainair District, Cibola National Forest, near Albuquerque, New Mexico, was not as serious as expected. Studies this year revealed the attacks were unsuccessful on more than half of the ponderosa hit in 1963. The infestation remains of concern; observation will continue.

Douglas-fir beetle, Dendroctonus pseudotsugae Hopk. Losses are heavy on the Kaibab National Forest, especially on Bill Williams Mountain, Williams, Arizona. Logging is used, where feasible, to control the pest.

Pinyon needle scale, Matsucoccus acalyptus Herbert. On the South Rim of Grand Canyon, scale populations varied in intensity, with the general trend increasing. At Mesa Verde National Park, Cortez, Colorado, populations remain very low in the 1962 and 1963 control area.

Fir engraver, Scolytus ventralis LeC. This pest is causing only minor damage to the white fir stands of the Region. A small infestation remains on the Mogollon Rim near Flagstaff, Arizona. Control is limited to removal of overmature white fir near high-use recreational areas.

Western balsam bark beetle, Dryocoetes confusus Sw. Tree mortality continued in most of the stands of corkbark and alpine fir in New Mexico. Tree killing is becoming increasingly evident in the true fir stands of northern Arizona.

Nevada buck moth, Hemileuca nevadensis Stretch. This voracious defoliator was suppressed before it stripped native cottonwood at White Sands National Monument, Alamogordo, New Mexico. The infestation was suppressed with Malathion and Sevin sprays applied with high volume ground equipment. This is the only known infestation of this moth on cottonwood in the Region.

Grass plant bug, Labops hesperius Uhler. At Cuba, New Mexico, about 1,200 acres of severely infested crested wheatgrass were sprayed to control the plant bug. This represents about 15 percent of the total infested area. Malathion was applied by helicopter. Control results were excellent.

DISEASE

Dwarfmistletoe of Ponderosa Pine, Arceuthobium vaginatum (Willd.) Presl.

This parasite continues to be the most serious disease of ponderosa pine in the Southwest. This disease has held and will continue to hold the status for many years, due to the importance of ponderosa pine as a lumber and pulp species in the Region. Mistletoe surveys are being carried out in conjunction with timber inventory and compartment examination. Timber and pulpwood sales are being used to reduce infection centers.

Yellow Witches Broom of White Fir, Melampsorella sp.

This rust fungus causes damage to white fir throughout the Region. Considerable mortality has occurred in the Red Canyon Recreation Area, Mountainair District, Cibola National Forest, and elsewhere in localized areas. In addition to tree mortality, cankers weaken the stems which are then easily broken by wind or snow -- a serious situation in recreation and other high use areas.

Needle blight of Douglas-fir, Rhabdocline pseudotsugae Syd.

Rhabdocline infections were not a problem on Douglas-fir this year in the Region. This blight is sporadic and spotty, occasionally becoming a serious problem in the Southwest.

Needle blight of Ponderosa Pine.

Needle blight was generally widespread throughout the Southwest this year, with infection intensity varying from area to area. One area of concern is Los Alamos, New Mexico, where a severe infection is causing premature needle cast and discoloration of needles.

Annosus root and butt rot, Fomes annosus (Fr.) Cke

Annosus root rot is being detected more frequently on pulp and pole-size conifers in this Region. The most serious infection centers are on the Coconino and Lincoln National Forests in reproduction around stumps in logged-over areas.

Hypoxylon Canker, Hypoxylon sp.

The known aspen areas infected with this disease are on the North Rim of Grand Canyon National Park, the Coconino National Forest, Flagstaff, and the Apache National Forest, Springerville, Arizona. It is not considered generally serious at the present because of the little emphasis placed on aspen in this Region.

Red rot, Polyporus anceps Pk.

The red rot fungus on ponderosa pine is second only to dwarfmistletoe in this Region. Losses are heavy in some pole-size ponderosa stands where this species is harvested for power poles. These losses are due to the reluctance of consumers to accept poles with any heart rot. Major losses continue in the older trees. Most red rot occurs in yellow-bark ponderosa.

Red heart, Fomes pini (Thore)

Red heart is only of minor importance in the Region except in the Sacramento Mountains of the Lincoln National Forest. Here it is more serious than red rot.

Atropellis canker of Ponderosa Pine, Atropellis piniphila (Weir)

The most serious problem exists on the Lincoln National Forest where stem infections cause deformation of stems, resulting in degrade of sawtimber. Mortality is frequent in reproduction and small poles, but as regeneration is not a problem in the affected area, this is not considered a very serious problem.

Fungus root disease of Pinyon, Verticicladiella sp.

This root disease continues to be a problem at Mesa Verde National Park, Colorado. Local infection centers remain active, killing small numbers of trees yearly. Frequently, the California five-spined ips attacks infected trees, later spreading to healthy trees surrounding the infected centers. Control is unknown for this fungus.

Sooty bark canker of Aspen, Cenangium singulare (Rehm.) Davidson and Cash

Sooty bark, a rather aggressive parasite, is considered the most serious disease of aspen in the Region. It is responsible for the bulk of aspen mortality, being able to girdle and kill trees in two to four years.

Limb rust of Ponderosa Pine, Peridermium stalactiforme Arth. and Kern

The rust seems to be increasingly noted throughout many areas of the Southwest. It probably causes more mortality than any other of the minor diseases of ponderosa.

Unknown

Several hundred acres of ponderosa pine on the south side of Capitan Mountain were discolored in late July and early August. Cause of the reddish discoloration is not known. No tree mortality was noted.